



STIC Search Report

EIC 1700

STIC Database Tracking Number: EIC 1700

TO: Nathan Nutter
Location: 10B75
Art Unit : 1711 ~~1007~~
May 3, 2005

Case Serial Number: 10/643144

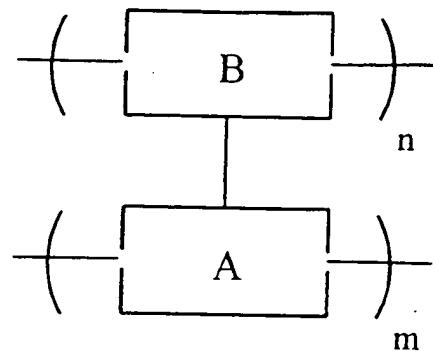
From: Usha Shrestha
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-3519
usha.shrestha@uspto.gov

Search Notes

CLAIMS

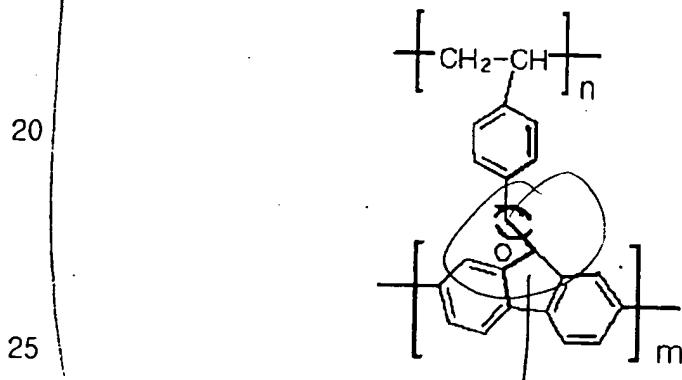
We claim:

1. A blue light-emitting polymer with ladder-type structure represented by
5 the following formula:



10 wherein A is selected from polyfluorene, polythiophene, polypyrrole, polycarbazole, polyphenylene, polyaniline, polypyridine; B is selected from polystyrene, polypyrrol, polycarbonate, polythiophene, polyphenylene, polyaniline, polypyridine, polycarbazole; n is an integer of 5 to 100; and m is an integer of 2 to 100.

15 2. The blue light-emitting polymers to claim 1, wherein A is polyfluorene
with the following formula and B is polystyrene:



SUBSTITUTE SPECIFICATION

wherein n is an integer of 5 to 100; and m is an integer of 2 to 100.

=> fil reg
FILE 'REGISTRY' ENTERED AT 16:21:42 ON 03 MAY 2005
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=> d his ful

FILE 'HCAPLUS' ENTERED AT 13:15:04 ON 03 MAY 2005
E US20040079924/PN
L1 1 SEA ABB=ON PLU=ON US2004079924/PN
D SCAN
SEL RN

FILE 'REGISTRY' ENTERED AT 13:15:38 ON 03 MAY 2005
L2 10 SEA ABB=ON PLU=ON (30030-25-2/BI OR 42914-68-1/BI OR
684215-56-3/BI OR 684215-57-4/BI OR 684215-58-5/BI OR
684215-59-6/BI OR 684215-60-9/BI OR 684215-61-0/BI OR
684215-62-1/BI OR 684215-63-2/BI)
D SCAN

FILE 'REGISTRY' ENTERED AT 13:47:23 ON 03 MAY 2005
L3 114929 SEA ABB=ON PLU=ON PSTY/PCT
L4 17767 SEA ABB=ON PLU=ON PC/PCT
L5 713 SEA ABB=ON PLU=ON PPH/PCT
E PYRROL/CN
L6 1 SEA ABB=ON PLU=ON PYRROL/CN
D RN
L7 717 SEA ABB=ON PLU=ON 109-97-7/CRN
E THIOPHENE/CN
L8 1 SEA ABB=ON PLU=ON THIOPHENE/CN
D RN
L9 293 SEA ABB=ON PLU=ON 110-02-1/CRN
E ANILINE/CN
L10 1 SEA ABB=ON PLU=ON ANILINE/CN
D RN
L11 3877 SEA ABB=ON PLU=ON 62-53-3/CRN
E PYRIDINE/CN
L12 1 SEA ABB=ON PLU=ON PYRIDINE/CN
D RN
L13 6778 SEA ABB=ON PLU=ON 110-86-1/CRN
E CARBAZOLE/CN
L14 1 SEA ABB=ON PLU=ON CARBAZOLE/CN
D RN
L15 251 SEA ABB=ON PLU=ON 86-74-8/CRN
E FLUORENE/CN
L16 1 SEA ABB=ON PLU=ON FLUORENE/CN
D RN
L17 198 SEA ABB=ON PLU=ON 86-73-7/CRN
L18 143865 SEA ABB=ON PLU=ON L3 OR L4 OR L5 OR L7 OR L9 OR L11
OR L13 OR L15
L19 12796 SEA ABB=ON PLU=ON L7 OR L9 OR L11 OR L13 OR L15 OR
L17 OR L5
L20 12599 SEA ABB=ON PLU=ON L18 AND L19
L21 1 SEA ABB=ON PLU=ON L20 AND L2
D SCAN
L22 7 SEA ABB=ON PLU=ON L2 AND L18
L23 1 SEA ABB=ON PLU=ON L2 AND L19

L24 D SCAN L22
 1 SEA ABB=ON PLU=ON L18 AND L17
 D SCAN
 L25 7639 SEA ABB=ON PLU=ON L20 AND 2/NC
 L26 SCR 1918
 L*** DEL 0 S L2 AND L15
 L27 1 SEA ABB=ON PLU=ON L2 AND L17
 L28 1 SEA ABB=ON PLU=ON L3 AND L17
 D SCAN
 E STYRENE/CN
 L29 1 SEA ABB=ON PLU=ON STYRENE/CN
 D SCAN
 D RN
 L30 9302 SEA ABB=ON PLU=ON L20 NOT 1-5/M
 SAV L30 NUT144/A

FILE 'HCAPLUS' ENTERED AT 15:41:17 ON 03 MAY 2005

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 L33 40285 SEA ABB=ON PLU=ON L19
 L34 40017 SEA ABB=ON PLU=ON L32 AND L33
 L35 1 SEA ABB=ON PLU=ON L22
 L36 10122 SEA ABB=ON PLU=ON L31 (L) PREP?/RL
 L37 45 SEA ABB=ON PLU=ON L36 AND LADDER?
 L38 4 SEA ABB=ON PLU=ON L37 AND OPTIC?/SC, SX
 D FHITSTR
 L39 444 SEA ABB=ON PLU=ON L36 AND OPTIC?/SC, SX
 L40 4 SEA ABB=ON PLU=ON L39 AND LADDER?
 L41 18 SEA ABB=ON PLU=ON L39 AND BLUE(2A)LIGHT?
 D FHITSTR
 D FHITSTR 2-3
 L42 21 SEA ABB=ON PLU=ON L41 OR L40 OR L38
 L43 16388 SEA ABB=ON PLU=ON L34 AND PREP?/RL
 L44 717 SEA ABB=ON PLU=ON L43 AND OPTIC?/SC, SX
 L45 4 SEA ABB=ON PLU=ON L44 AND LADDER?
 L46 23 SEA ABB=ON PLU=ON L44 AND BLUE(2A)LIGHT?
 L47 26 SEA ABB=ON PLU=ON L46 OR L45
 L48 26 SEA ABB=ON PLU=ON L42 OR L47 OR L35
 L49 1 SEA ABB=ON PLU=ON L37 AND BLUE(2A)LIGHT?
 D SCAN
 L50 7 SEA ABB=ON PLU=ON L37 AND (ELECTROLUMIN? OR LUMINES?
 OR ?EMIT? OR LED OR OLED)
 D FHITSTR
 D FHITSTR 2-3
 L51 29 SEA ABB=ON PLU=ON L48 OR L49 OR L50

FILE 'REGISTRY' ENTERED AT 16:21:42 ON 03 MAY 2005

FILE HCAPLUS

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L15      251 SEA FILE=REGISTRY ABB=ON     PLU=ON    86-74-8/CRN
L17      198 SEA FILE=REGISTRY ABB=ON     PLU=ON    86-73-7/CRN
L18      143865 SEA FILE=REGISTRY ABB=ON   PLU=ON    L3 OR L4 OR L5 OR L7
          OR L9 OR L11 OR L13 OR L15
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=> d 151 1-29 ibib abs hitstr hitind
L51 ANSWER 1 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:25671 HCAPLUS
DOCUMENT NUMBER: 142:298402
TITLE: Poly(fluorene)s and poly(p-phenylene)s with
        pyrenyltriazine segments: synthesis and
        photophysics
AUTHOR(S): Mikroyannidis, John A.; Persephonis, Peter G. ;
           Giannetas, Vassilis G.
```

CORPORATE SOURCE: Chemical Technology Laboratory, Department of Chemistry, University of Patras, Patras, GR-26500, Greece

SOURCE: Synthetic Metals (2005), 148(3), 293-299
CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

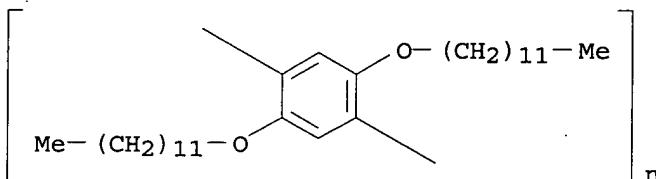
LANGUAGE: English

AB A Friedel-Crafts reaction between cyanuric chloride and pyrene afforded 2,4-dichloro-6-(pyren-1-yl)-1,3,5-triazine (1). This reacted with 4-bromophenol to yield 2,4-bis(4-bromophenoxy)-6-(pyren-1-yl)-1,3,5-triazine (2). A series of random copolymers PF-Pyr with various compns. were prepared by Suzuki polycondensation from 2,7-dibromo-9,9-di-2-ethylhexylfluorene (3) and 2. In addition, a series of random copolymers PP-Pyr were similarly prepared from 1,4-dibromo-2,5-didodecyloxybenzene (5) and 2. Solns. of copolymers PF-Pyr emitted blue light with photoluminescence (PL) maximum at 414-444 nm. Thin films of these copolymers emitted intense green light with PL maximum near 520 nm. An efficient energy transfer took place in thin films from the fluorene to the pyrenyltriazine segment even the content of the latter in copolymer was 0.5 mol%. Copolymers PP-Pyr behaved as blue light-emitting materials both in solution and solid state. Their PL maximum was red shifted with increasing the pyrenyltriazine content in copolymer. The PL quantum yields in solution were 0.42-0.56 for PF-Pyr and 0.27-0.35 for PP-Pyr.

IT 156028-49-8P, Poly[2,5-bis(dodecyloxy)-1,4-phenylene]
(preparation, photophysics, and properties of poly(fluorene)s and poly(p-phenylene)s with pyrenyltriazine segments)

RN 156028-49-8 HCAPLUS

CN Poly[2,5-bis(dodecyloxy)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 73

IT 156028-49-8P, Poly[2,5-bis(dodecyloxy)-1,4-phenylene]

847567-82-2P 847567-83-3P 847567-84-4P

(preparation, photophysics, and properties of poly(fluorene)s and poly(p-phenylene)s with pyrenyltriazine segments)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 2 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:833279 HCAPLUS

DOCUMENT NUMBER: 142:280471

TITLE: Conjugated Polymers with Linear and Hyperbranched Structures and Advanced Materials Properties

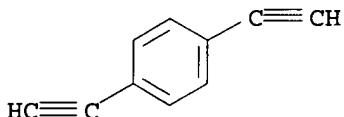
AUTHOR(S): Yip, Jacky Wing; Peng, Han; Haeussler, Matthias; Zheng, Ronghua; Tang, Ben

CORPORATE SOURCE: Department of Chemistry, Center for Display Research, Institute of Nano Science and Technology, Kowloon, Hong Kong
 SOURCE: Molecular Crystals and Liquid Crystals (2004), 415, 43-60
 CODEN: MCLCD8; ISSN: 1542-1406
 PUBLISHER: Taylor & Francis, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Alkyne polymers are effected by tungsten- and tantalum-based catalysts, giving linear polyacetylenes (LPAs) and hyperbranched polyarylenes (HPAs) of high mol. wts. (Mw up to 2.5 + 10⁵) in high yields (up to 93%). All the LPAs and HPAs are thermally stable and completely soluble in common solvents such as THF, toluene, dichloromethane, and chloroform. Incorporation of biphenyl mesogenic pendants into poly(1-phenyl-1-hexyne) structure endows the LCPA with nematicity. Upon photoexcitation, the LPAs and HPAs emit strong UV and blue lights with high quantum yields (up to 94%). Multilayer electroluminescence devices of LPAs emit blue light with maximum luminance and external quantum efficiency of 1065 cd/m² and 0.86%, resp. The HPAs attenuate strong laser pulses, with optical limiting performances comparable to that of C₆₀, a well-known optical limiter.

IT 365568-89-4P 365568-91-8P
 (preparation and properties of polyacetylene conjugated polymers with linear and hyperbranched structures)
 RN 365568-89-4 HCAPLUS
 CN Benzene, 1,4-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX NAME)

CM 1

CRN 935-14-8
CMF C10 H6

CM 2

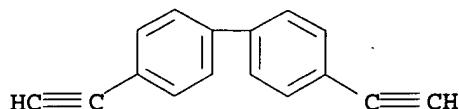
CRN 629-05-0
CMF C8 H14Me—(CH₂)₅—C≡CH

RN 365568-91-8 HCAPLUS
 CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

CMF C16 H10



CM 2

CRN 629-05-0
CMF C8 H14Me—(CH₂)₅—C≡CH

CC 35-4 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 73, 76
 IT 365568-89-4P 365568-91-8P 365568-94-1P
 516510-16-0P 847197-32-4P
 (preparation and properties of polyacetylene conjugated polymers
 with linear and hyperbranched structures)
 REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L51 ANSWER 3 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:352848 HCPLUS
 DOCUMENT NUMBER: 140:382864
 TITLE: Blue light-emitting, ladder-type
 polymer with excellent heat stability
 INVENTOR(S): Kwag, Gwang Hoon; Park, Eun Joo; Kim, Eun Il;
 Koh, Jae Young
 PATENT ASSIGNEE(S): Korea Kumho Petrochemical Co., Ltd., S. Korea
 SOURCE: U.S. Pat. Appl. Publ., 15 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004079924	A1	20040429	US 2003-643144	2003 0818
JP 2004143426	A2	20040520	JP 2003-303391	2003 0827
PRIORITY APPLN. INFO.:			KR 2002-65464	A 2002 1025

AB The invention relates to the ladder-type blue
 light-emitting polymers with excellent heat

stability which are polymerized either grafting with blue luminescent monomers on the polymer backbones or adding fluorene to styrene monomers. The above blue light-emitting polymers have a high glass transition temperature and a 5%-weight-loss temperature >400°. Accordingly these polymers can be used as blue luminescent materials in the display devices and as luminescent cases for home appliances or cellular phones.

IT 684215-57-4P 684215-58-5P 684215-59-6P
 684215-60-9P 684215-61-0P 684215-62-1P
 684215-63-2P
 (blue light-emitting,
 ladder-type polymer for electroluminescent device)
 RN 684215-57-4 HCPLUS
 CN 9H-Fluorene, 2,7-dibromo-, polymer with (chloromethyl)ethenylbenzene, graft (9CI) (CA INDEX NAME)
 CM 1
 CRN 30030-25-2
 CMF C9 H9 Cl
 CCI IDS

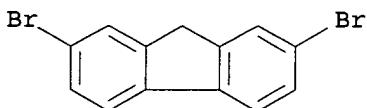


D1—CH₂—Cl

D1—CH=CH₂

CM 2

CRN 16433-88-8
 CMF C13 H8 Br2



RN 684215-58-5 HCPLUS
 CN 9H-Fluorene, polymer with (chloromethyl)ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 30030-25-2
 CMF C9 H9 Cl
 CCI IDS

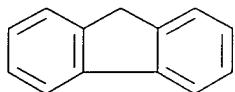


D1—CH₂—Cl

D1—CH=CH₂

CM 2

CRN 86-73-7
CMF C13 H10



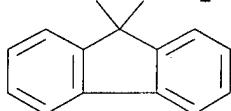
RN 684215-59-6 HCAPLUS

CN 9H-Fluorene, 9,9-dihexyl-, polymer with
(chloromethyl)ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 123863-97-8
CMF C25 H34

Me—(CH₂)₅ (CH₂)₅—Me



CM 2

CRN 30030-25-2
CMF C9 H9 Cl
CCI IDS

D1-CH₂-ClD1-CH=CH₂

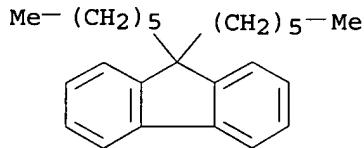
RN 684215-60-9 HCPLUS

CN 9H-Fluorene, 2,7-dibromo-, polymer with
(chloromethyl)ethenylbenzene and 9,9-dihexyl-9H-fluorene, graft
(9CI) (CA INDEX NAME)

CM 1

CRN 123863-97-8

CMF C25 H34



CM 2

CRN 30030-25-2

CMF C9 H₉ Cl

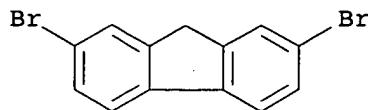
CCI IDS

D1-CH₂-ClD1-CH=CH₂

CM 3

CRN 16433-88-8

CMF C13 H₈ Br2



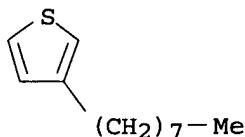
RN 684215-61-0 HCPLUS

CN Thiophene, 3-octyl-, polymer with (chloromethyl)ethenylbenzene and 2,7-dibromo-9H-fluorene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 65016-62-8

CMF C12 H20 S



CM 2

CRN 30030-25-2

CMF C9 H9 Cl

CCI IDS



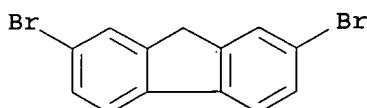
D1-CH₂-Cl

D1-CH=CH₂

CM 3

CRN 16433-88-8

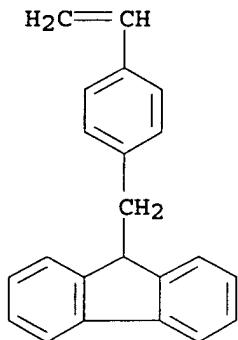
CMF C13 H8 Br2



RN 684215-62-1 HCPLUS

CN 9H-Fluorene, 9-[(4-ethenylphenyl)methyl]-, homopolymer, syndiotactic (9CI) (CA INDEX NAME)

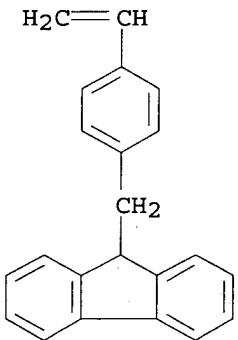
CM 1

CRN 684215-56-3
CMF C22 H18

RN 684215-63-2 HCAPLUS

CN 9H-Fluorene, 9-[(4-ethenylphenyl)methyl]-, polymer with
ethenylbenzene, syndiotactic, graft (9CI) (CA INDEX NAME)

CM 1

CRN 684215-56-3
CMF C22 H18

CM 2

CRN 100-42-5
CMF C8 H8 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$ IC ICM C09K011-06
INCL 252301350CC 73-11 (Optical, Electron, and Mass Spectroscopy and
Other Related Properties)
Section cross-reference(s): 37, 74

ST blue light emitting ladder
 polymer heat stability
 IT Conducting polymers
 Electroluminescent devices
 (blue light-emitting,
 ladder-type polymer for electroluminescent
 device)
 IT Ladder polymers
 (blue light-emitting,
 ladder-type polymer for electroluminescent
 device)
 IT Luminescent substances
 (electroluminescent polymers; blue
 light-emitting, ladder-type polymer
 for electroluminescent device)
 IT 30030-25-2 42914-68-1
 (blue light-emitting,
 ladder-type polymer for electroluminescent
 device)
 IT 684215-56-3P
 (blue light-emitting,
 ladder-type polymer for electroluminescent
 device)
 IT 684215-57-4P 684215-58-5P 684215-59-6P
 684215-60-9P 684215-61-0P 684215-62-1P
 684215-63-2P
 (blue light-emitting,
 ladder-type polymer for electroluminescent
 device)

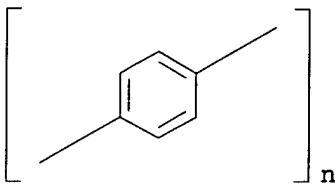
L51 ANSWER 4 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2003:977868 HCAPLUS
 DOCUMENT NUMBER: 140:206715
 TITLE: Chain-length dependent para-phenylene film-
 and needle-growth on dielectrics
 AUTHOR(S): Balzer, F.; Rubahn, H.-G.
 CORPORATE SOURCE: Institut fur Physik/ASP, Humboldt-Universitat
 zu Berlin, Berlin, D-12489, Germany
 SOURCE: Surface Science (2004), 548(1-3), 170-182
 CODEN: SUSCAS; ISSN: 0039-6028
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Surface unit cells of vacuum grown ultrathin films of blue
 -light emitting para-phenylene oligomers on alkali
 halides and on muscovite mica were determined using LEED. Both, films
 from upright and from laying mols. are grown on alkali halide (1 0
 0) and mica (0 0 1) single crystal faces. On alkali halide (1 0
 0) faces the ordered growth of upright phenylene mols. with
 several rotational domains is observed, whereas on mica (0 0 1)
 single crystalline aggregates (nanofibers) of laying mols. are formed.
 Their mutual parallel orientation is strictly determined by the
 orientation of mica surface dipoles. Structural information from
 diffraction expts. is complemented by morphol. information using
 fluorescence- and atomic force microscopy as well as UV/visible
 absorption spectroscopy.

IT 25190-62-9P, Poly(1,4-phenylene)
 (chain-length dependent para-phenylene film- and needle-growth
 on dielecs.)

RN 25190-62-9 HCAPLUS

CN Poly(1,4-phenylene) (9CI) (CA INDEX NAME)



CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 66, 76

IT 25190-62-9P, Poly(1,4-phenylene)
(chain-length dependent para-phenylene film- and needle-growth on dielectcs.)

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 5 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:671141 HCAPLUS

DOCUMENT NUMBER: 139:180854

TITLE: Copolymer comprising meta-phenylene unit and ortho-phenylene unit

INVENTOR(S): Yamamoto, Ryuichi; Arai, Takashi

PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
-----	-----	-----	-----	-----
JP 2003238666	A2	20030827	JP 2002-46564	2002 0222

PRIORITY APPLN. INFO.: JP 2002-46564

2002
0222AB The organic solvent-soluble copolymer consists of 20-95% nonsubstituted m-phenylene units and balance nonsubstituted o-phenylene units, which shows good heat resistance and blue light emission under UV irradiation. Thus, 8:2 mixture of m-dibromobenzene and o-dibromobenzene were polymerized in the presence of Mg and NiCl₂(2,2'-bipyridine) in refluxed THF for 24 h to give the copolymer, whose solution was cast to give a film showing fluorescence at λ_{max} 350 nm.

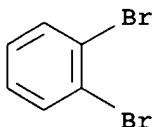
IT 581772-64-7P, m-Dibromobenzene-o-dibromobenzene copolymer (solvent-soluble copolymer comprising meta-phenylene unit and ortho-phenylene unit showing fluorescence)

RN 581772-64-7 HCAPLUS

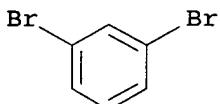
CN Benzene, 1,2-dibromo-, polymer with 1,3-dibromobenzene (9CI) (CA

INDEX NAME)

CM 1

CRN 583-53-9
CMF C6 H4 Br2

CM 2

CRN 108-36-1
CMF C6 H4 Br2

IC ICM C08G061-10

ICS H05B033-14; C09K011-06

CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 38, 73IT 581772-64-7P, m-Dibromobenzene-o-dibromobenzene copolymer
(solvent-soluble copolymer comprising meta-phenylene unit and
ortho-phenylene unit showing fluorescence)

L51 ANSWER 6 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:893956 HCPLUS

DOCUMENT NUMBER: 139:101494

TITLE: Synthesis and optical properties of
hyperbranched polyaryleneAUTHOR(S): Peng, Han; Luo, Jingdong; Cheng, Lin; Lam,
Jacky W. Y.; Xu, Kaitian; Dong, Yuping; Zhang,
Dezhen; Huang, Yi; Xu, Zhongde; Tang, Ben
ZhongCORPORATE SOURCE: Institute of Nano Science, Open Laboratory of
Chirotechnology, Institute of Molecular
Technology for Drug Discovery and Synthesis,
Department of Chemistry, Hong Kong University
of Science and Technology, Clear Water Bay,
Kowloon, Hong KongSOURCE: Optical Materials (Amsterdam, Netherlands)
(2003), 21(1-3), 315-320
CODEN: OMATET; ISSN: 0925-3467

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB High mol. weight, hyperbranched polyarylene were synthesized in high
isolation yields by the copoly-cyclotrimerization of
2,5-diethynyl-thiophene (1), 4,4'-biphenyl-diyne (2), and

2,7-diethynyl-fluorene (3) with 1-heptyne (4) and 1-dodecyne (5) using $TaCl_5\text{-}Ph_4Sn$ as the catalyst in toluene. The structures of the polymers were characterized by IR, NMR, TGA, and UV analyses. All the polymers exhibited outstanding thermal stability and emitted strong blue light, whose intensities are higher than that of poly(1-phenyl-1-octyne), a well-known highly emissive polyacetylene. Little red shift was observed in the photoluminescence of the polymer thin films. The polymers strongly attenuated intense pulses of 532 nm laser pulses.

IT 365568-91-8P

(hyperbranched; synthesis and optical properties of hyperbranched polyarylene)

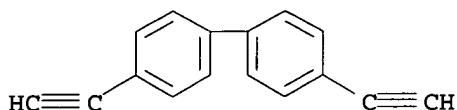
RN 365568-91-8 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

CMF C16 H10



CM 2

CRN 629-05-0

CMF C8 H14

Me-(CH₂)₅-C≡CH

CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 73

IT 365568-91-8P 365568-95-2P 560134-61-4P

(hyperbranched; synthesis and optical properties of hyperbranched polyarylene)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 7 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:728858 HCAPLUS

DOCUMENT NUMBER: 137:255082

TITLE: Heat-resistant low-crystallinity adamantane derivative and its use for organic electroluminescent device with high luminescent efficiency and long service life

INVENTOR(S): Takeuchi, Hisato; Tanaka, Hiromitsu; Mouri, Makoto; Mori, Tomohiko; Kojima, Kazushige

PATENT ASSIGNEE(S): Toyota Central Research and Development Laboratories, Inc., Japan; Denso Co., Ltd.

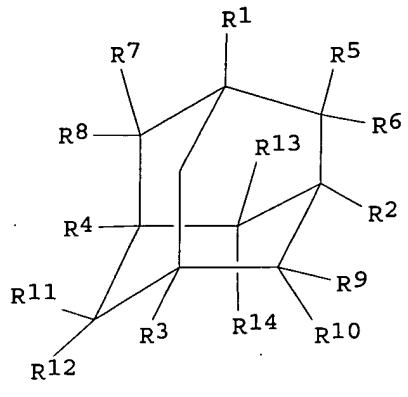
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002275103	A2	20020925	JP 2001-81434	2001 0321
PRIORITY APPLN. INFO.:			JP 2001-81434	2001 0321

OTHER SOURCE(S) : MARPAT 137:255082
 GI

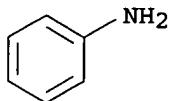


AB Title derivative is expressed by a general formula I (≥ 3 of R1-R14 = functional units having hole-transporting, luminous, or electron-transporting properties). The electroluminescent device has ≥ 1 layer containing the adamantane derivative between electrodes. Thus, an electroluminescent device containing tetraphenylenyl-substituted adamantane as an electroluminescent layer and NPD as a hole-transporting layer emitted blue light with luminance 350 cd/m² at 10 mA/cm².

IT 142-04-1, Aniline hydrochloride
 (preparation of adamantane derivative for organic electroluminescent device with high luminescent efficiency and long service life)

RN 142-04-1 HCPLUS

CN Benzenamine, hydrochloride (9CI) (CA INDEX NAME)



● HCl

IC ICM C07C013-68
 ICS C07C025-22; C07C211-50; C09K011-06; H05B033-14; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and
 Other Related Properties)
 Section cross-reference(s): 24
 IT 62-53-3, Aniline, reactions 142-04-1, Aniline
 hydrochloride 32446-12-1, 1-Bromoadamantan-2-one 39751-07-0,
 2,6-Adamantanedione 164461-18-1
 (preparation of adamantane derivative for organic electroluminescent device
 with high luminescent efficiency and long service life)

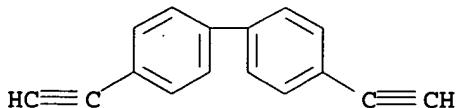
L51 ANSWER 8 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:626665 HCPLUS
 DOCUMENT NUMBER: 138:17757
 TITLE: Hyperbranched polyphenylenes containing
 biphenyl moieties: Synthesis, light emission,
 and optical limiting
 AUTHOR(S): Peng, Han; Lam, Jacky-Yip; Chen, Junwu; Zheng,
 Yonghua; Luo, Jingdong; Xu, Kaitian; Tang, Ben
 Zhong
 CORPORATE SOURCE: Institute of Nano Science and Technology, Hong
 Kong University, Kowloon, Peop. Rep. China
 SOURCE: Polymer Preprints (American Chemical Society,
 Division of Polymer Chemistry) (2002), 43(2),
 1318-1319
 CODEN: ACPPAY; ISSN: 0032-3934
 PUBLISHER: American Chemical Society, Division of Polymer
 Chemistry
 DOCUMENT TYPE: Journal; (computer optical disk)
 LANGUAGE: English

AB A series of hyperbranched polyphenylenes were synthesized by
 TaCl₅- and NbCl₅-catalyzed copolycyclotrimerizations of a
 4,4'-diethynylbiphenyl with different monoacetylenes or monoynes.
 These copolymers have good solubility in common organic solvents including
 THF, toluene, chloroform and DCM, and possess excellent thermal
 stability. All the polyphenylenes effectively limit the 8-ns
 pulses of 532 nm laser light and all emit strong deep-blue
 light of ≈400 nm when excited at 345 nm. These
 novel hyperbranched polymers are thus excellent optical materials
 with high thermal stability.

IT 76307-47-6P 477587-90-9P 477587-91-0P
 (synthesis, light emission, and optical limiting of
 hyperbranched polyphenylenes containing biphenyl moieties)
 RN 76307-47-6 HCPLUS
 CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with ethynylbenzene (9CI)
 (CA INDEX NAME)

CM 1

CRN 38215-38-2
CMF C16 H10



CM 2

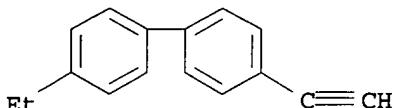
CRN 536-74-3
CMF C8 H6

Ph-C≡CH

RN 477587-90-9 HCPLUS
CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 4-ethyl-4'-ethynyl-
1,1'-biphenyl (9CI) (CA INDEX NAME)

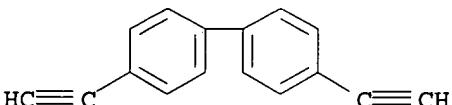
CM 1

CRN 477587-89-6
CMF C16 H14



CM 2

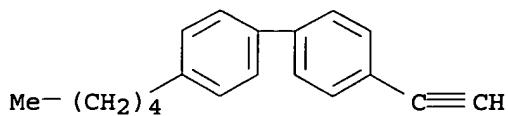
CRN 38215-38-2
CMF C16 H10



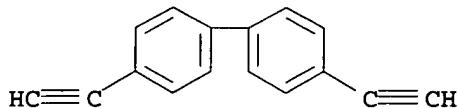
RN 477587-91-0 HCPLUS
CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 4-ethynyl-4'-pentyl-
1,1'-biphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 80563-43-5
CMF C19 H20



CM 2

CRN 38215-38-2
CMF C16 H10

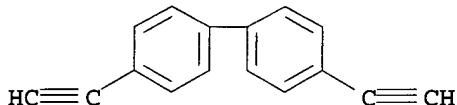
IT 365568-92-9P

(synthesis, light emission, and optical limiting of hyperbranched polyphenylenes containing biphenyl moieties)

RN 365568-92-9 HCPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-dodecyne (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2
CMF C16 H10

CM 2

CRN 765-03-7
CMF C12 H22Me- (CH₂)₉- C≡CH

CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 38

IT 76307-47-6P 477587-90-9P 477587-91-0P

(synthesis, light emission, and optical limiting of hyperbranched polyphenylenes containing biphenyl moieties)

IT 365568-92-9P

(synthesis, light emission, and optical limiting of hyperbranched polyphenylenes containing biphenyl moieties)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L51 ANSWER 9 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:453881 HCPLUS
 DOCUMENT NUMBER: 137:208033
 TITLE: Combinatorial synthesis and screening for blue luminescent π -conjugated polymer thin film
 AUTHOR(S): Muramatsu, Yukiko; Yamamoto, Takakazu;
 Hayakawa, Tomohiro; Koinuma, Hideomi
 CORPORATE SOURCE: CREST - Japan Science and Technology Corporation, Kawaguchi, Saitama, 332-0012, Japan
 SOURCE: Applied Surface Science (2002), 189(3-4), 319-326
 CODEN: ASUSEE; ISSN: 0169-4332
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Two series of random copolymers (poly(PP-ran-MP)s which consist of p-phenylene, PP, and m-phenylene, MP, units and poly(PPy-ran-MPy)s which consist of p-pyridine, PPy, and m-pyridine, MPy, units) with various monomeric unit ratios were prepared. Thin films of poly(PP-ran-MP)s were combinatorially deposited by vacuum evaporation with a fixed mask and slit masks on a quartz glass, and poly(PPy-ran-MPy)s were superposed on the poly(PP-ran-MP)s layer. The thin film of poly(PP-ran-MP) containing the PP and MP units in a 5:5 ratio, poly(PP-ran-MP-5/5), showed 7.6 times stronger blue photoluminescence (PL), compared with the thin films of poly(p-phenylene), PPP, and poly(m-phenylene), PMP, homopolymers. The PL intensity of the film of poly(PP-ran-MP-5/5) was much stronger than the sum of the PL intensities of the films of PPP and PMP. Furthermore, [poly(m-pyridine), PMPy/poly(PP-ran-MP-5/5)] bi-layer film emitted blue light of about 3 times stronger intensity than the poly(PP-ran-MP-5/5) monolayer film. An alternating copolymer of p-phenylene and m-phenylene, poly(PP-alt-MP-5/5) was prepared by a Stille coupling reaction and its PL peak was observed at about 50 nm shorter wavelength than that of poly(PP-ran-MP-5/5).

IT 148601-77-8P, 1,4-Dibromobenzene-1,3-dibromobenzene copolymer
 (combinatorial synthesis and screening for blue luminescent π -conjugated polymer thin film)

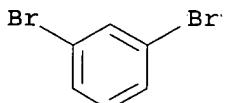
RN 148601-77-8 HCPLUS

CN Benzene, 1,3-dibromo-, polymer with 1,4-dibromobenzene (9CI) (CA INDEX NAME)

CM 1

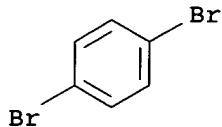
CRN 108-36-1

CMF C6 H4 Br2



CM 2

CRN 106-37-6
CMF C6 H4 Br2



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s) : 38
IT 148601-77-8P, 1,4-Dibromobenzene-1,3-dibromobenzene copolymer 452309-08-9P, 2,5-Dibromopyridine-3,5-dibromopyridine copolymer 452309-09-0P, 1,4-Bis(trimethylstannylyl)benzene-1,3-dibromobenzene copolymer
(combinatorial synthesis and screening for blue luminescent π -conjugated polymer thin film)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 10 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:408987 HCPLUS

DOCUMENT NUMBER: 136:408818

TITLE: Electroluminescent devices using organometallic complex emitting layers

INVENTOR(S): Kathirgamanathan, Poopathy

PATENT ASSIGNEE(S): Elam-T Limited, UK

SOURCE: PCT Int. Appl., 54 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	

WO 2002043446	A1	20020530	WO 2001-GB5111	

2001
1121

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,
KP, KR, KZ, LC, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA,
ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT,
BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG

AU 2002023077	A5	20020603	AU 2002-23077	
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2001
1121

EP 1336325	A1	20030820	EP 2001-997975
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR JP 2004515042 T2 20040520 JP 2002-545036	2001 1121
US 2004023062 A1 20040205 US 2003-442663	2001 1121
PRIORITY APPLN. INFO.:	GB 2000-28439 A 2003 0520
	2000 1121
	WO 2001-GB5111 W 2001 1121

AB Electroluminescent devices are described which comprise a first electrode, a hole-transporting layer formed of material which emits light in the blue spectrum, an electroluminescent layer incorporating a rare earth complex with an organic ligand, and a second electrode.

IT 25233-30-1, Polyaniline
(electroluminescent devices using rare earth organometallic complex emitting layers)

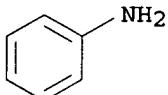
RN 25233-30-1 HCPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



IC ICM H05B033-14

ICS H01L051-20; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76, 78

IT 905-62-4 2085-33-8, Tris(8-hydroxyquinolinato)aluminum
5521-31-3D, derivs. 7429-90-5, Aluminium, uses 7439-93-2,
Lithium, uses 7440-19-9D, Samarium, compds. 7440-27-9D,
Terbium, compds. 7440-70-2, Calcium, uses 15082-28-7
23467-27-8 25067-59-8, Poly(vinylcarbazole) 25233-30-1
, Polyaniline 25387-93-3 37271-44-6 50926-11-9, ITO
58280-31-2 58328-31-7D, derivs. 65181-78-4, TPD
105389-36-4D, derivs. 123847-85-8, α-NPD 123847-85-8D,
α-NPD, derivs. 123847-87-0D, derivs. 124729-98-2, Mtdta
134917-82-1 135804-06-7 138372-67-5 142289-08-5D, derivs.
146162-54-1 148044-16-0 148896-39-3 150405-69-9
156952-11-3 182069-71-2 203642-12-0D, derivs. 214341-85-2D,
derivs. 431947-33-0
(electroluminescent devices using rare earth organometallic

complex emitting layers)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 11 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:832337 HCAPLUS

DOCUMENT NUMBER: 136:102940

TITLE: Linear and hyperbranched polymers with high thermal stability and luminescence efficiency
Lam, Jacky Wing Yip; Luo, Jing-Dong; Peng, Han; Xie, Zhi-Liang; Xue, Kai-Tian; Dong, Yu-Ping; Cheng, Lin; Qiu, Cheng-Feng; Kwok, Hoi Sing; Tang, Ben-Zhong

CORPORATE SOURCE: Department of Chemistry, Hong Kong University of Science and Technology, Hong Kong, Peop. Rep. China

SOURCE: Chinese Journal of Polymer Science (2001), 19(6), 585-590

CODEN: CJPSEG; ISSN: 0256-7679

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB New acetylene monomers, 6-{[(1-naphthylethynyl-4-phenyl)carbonyl]oxy}-1-phenyl-1-hexyne (1), 2,5-diethynylthiophene (3), and 4,4'-diethynylbiphenyl (6) were synthesized. Homopolymerizations of 1 and copolymercyclotrimerizations of 3 and 6 with 1-heptyne and 1-octyne have been achieved with WC₁₆- and TaCl₅-Ph₄Sn catalysts, resp., giving soluble linear disubstituted polyacetylene (2) and hyperbranched polyarylenes (5 and 8) with high mol. wts. (up to 1.2 + 105) in high yields (up to 98%). The structures and properties of the polymers are characterized and evaluated by IR, NMR, TGA, UV, photoluminescence (PL), and electroluminescence (EL) analyses. All the polymers possess high thermal stability and emit strong **blue light** upon photoexcitation.

The intensity of the emitted light is greater than that of poly(1-phenyl-1-octyne), a well-known highly luminescent disubstituted polyacetylene. Little aggregation-induced red shift in the PL was observed in the thin films of the polymers. By constructing a multi-layer EL device, high EL quantum yield (0.18%) has been achieved in 2, which are the best results for substituted polyacetylenes attainable so far.

IT 365568-91-8P
(hyperbranched; preparation and luminescence efficiency of linear and hyperbranched polymers with high thermal stability)

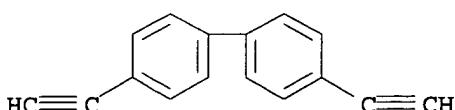
RN 365568-91-8 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX NAME)

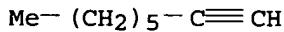
CM 1

CRN 38215-38-2

CMF C16 H10



CM 2

CRN 629-05-0
CMF C8 H14

CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 35, 73
 IT 365568-91-8P 372075-44-0P
 (hyperbranched; preparation and luminescence efficiency of linear
 and hyperbranched polymers with high thermal stability)
 REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L51 ANSWER 12 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2001:763374 HCPLUS
 DOCUMENT NUMBER: 135:310707
 TITLE: Oligomeric and polymeric OLED
 materials produced via arylation of quinones
 INVENTOR(S): Koch, George C.
 PATENT ASSIGNEE(S): Honeywell International Inc., USA
 SOURCE: PCT Int. Appl., 57 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001078162	A2	20011018	WO 2001-US11793	2001 0410
WO 2001078162	A3	20020221		
	W: JP, KR			
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR			
US 2002037428	A1	20020328	US 2001-833201	2001 0410
US 6784322	B2	20040831		
EP 1196956	A2	20020417	EP 2001-930478	2001 0410
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			
JP 2003530366	T2	20031014	JP 2001-574917	2001 0410
PRIORITY APPLN. INFO.:			US 2000-195902P	P 2000 0410

WO 2001-US11793

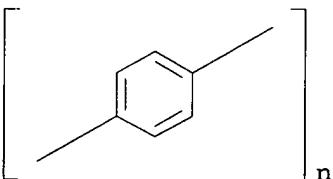
W

2001
0410

OTHER SOURCE(S) : MARPAT 135:310707

AB Organic light-emitting device materials are described by the general formula R1-(Ari)n-R2 (n = 5-15; i = 1-n and denotes the position downstream from R1; each Ari = independently selected (un)substituted aryl; R1 and R2 = substituents that increase the solubility of the para-phenylene compound in nonpolar organic solvents relative to the solubility of the corresponding compound wherein R1 and R2 are hydrogen; with the proviso that the Ari groups are linked together in a 1,4-paraphenylene manner). Preferably, the Ari include benzoquinone or hydroquinone units. Methods of preparing the polymeric materials on a solid support are described which entail contacting a solid support-bound aryl diazonium salt with 3,6-dichloroquinone under conditions sufficient to form a solid support-bound aryl quinone derivative; and contacting the solid support-bound aryl quinone derivative with a selected diazonium compound under conditions sufficient to form an intermediate material; repeating the preceding steps 2-70 times; and terminating the polymeric material by contacting the product with a terminating diazonium compound. The materials may be oligomers or block copolymers. Branched polymeric aromatic compds. comprising tetrasubstituted Ph rings with substituents at the 1, 2, 4, and 5 positions which are described by the general formula R-(Ari)n'-(R = (un)substituted C1-12 alkyl, (un)substituted C1-12 alkoxy, Ph, or halo; and n' = 3-8) and polyfuran ladder oligomers are also described. Methods of producing light-emitting polymers are also described which entail photopolymn. of the oligomers.

IT 25190-62-9DP, Poly(1,4-phenylene), derivs.
(oligomeric and polymeric electroluminescent materials and their production)

RN 25190-62-9 HCAPLUS**CN** Poly(1,4-phenylene) (9CI) (CA INDEX NAME)**IC** ICM H01L051-30**CC** 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s) : 38, 76

ST electroluminescent material oligomeric polymeric; quinoline deriv polymer electroluminescent material**IT** Polymers, uses
(aromatic; oligomeric and polymeric electroluminescent materials and their production)**IT** Phosphors
(electroluminescent; oligomeric and polymeric electroluminescent materials and their production)**IT** Polymers, uses

IT (heterocyclic; oligomeric and polymeric
electroluminescent materials and their production)
 IT Arylation
 Electroluminescent devices
 (oligomeric and polymeric electroluminescent
materials and their production)
 IT Oligomers
 (oligomeric and polymeric electroluminescent
materials and their production)
 IT Quinones
 (polymers; oligomeric and polymeric electroluminescent
materials and their production)
 IT 71-43-2DP, Benzene, aryl derivs., uses 106-51-4DP,
 2,5-Cyclohexadiene-1,4-dione, derivs., polymers 123-31-9DP,
 Hydroquinone, derivs., polymers 25086-73-1DP, derivs.
 25190-62-9DP, Poly(1,4-phenylene), derivs.
 (oligomeric and polymeric electroluminescent
materials and their production)
 IT 615-93-0
 (oligomeric and polymeric electroluminescent
materials and their production)

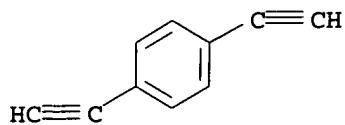
L51 ANSWER 13 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2001:585225 HCPLUS
 DOCUMENT NUMBER: 135:304376
 TITLE: Light emitting and optical limiting properties
of hyperbranched polyphenylenes
 AUTHOR(S): Peng, Han; Luo, Jingdong; Cheng, Lin; Xu,
Kaitain; Jia, Demin; Zhang, Dezheng; Xu,
Zhongde; Tang, Ben Zhong
 CORPORATE SOURCE: Department of Chemistry, Hong Kong University
of Science and Technology, Hong Kong, Peop.
Rep. China
 SOURCE: Polymeric Materials Science and Engineering
(2001), 85, 383-384
 CODEN: PMSEDG; ISSN: 0743-0515
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB New hyperbranched polyphenylenes with high mol. wts. were synthesized by copolycyclotrimerization of diynes with monoynes with various aromatic and aliphatic groups. The structures and properties of the copolymers are characterized and evaluated by IR, UV, NMR, TGA and fluorescence analyses. The results indicate that these copolymers have good solubility in common organic solvents, excellent thermal stability, and emit strong deep-blue light at 400 nm. The observed fluorescence intensities are much higher than that of poly(1-phenyl-1-octyne), a well-known highly fluorescent acetylene. All the polyphenylenes effectively limit the 8-ns pulses of 532 nm laser light. These novel hyperbranched polyphenylenes are thus excellent optical limiting materials with high thermal stability.

IT 28408-99-3P 76307-47-6P 365568-89-4P
 365568-90-7P 365568-91-8P 365568-92-9P
 (light emitting and optical limiting properties of
hyperbranched polyphenylenes)
 RN 28408-99-3 HCPLUS
 CN Benzene, 1,4-diethynyl-, polymer with ethynylbenzene (9CI) (CA
INDEX NAME)

CM 1

CRN 935-14-8
 CMF C10 H6



CM 2

CRN 536-74-3
 CMF C8 H6

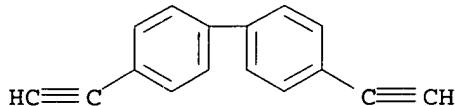
Ph-C≡CH

RN 76307-47-6 HCAPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with ethynylbenzene (9CI)
 (CA INDEX NAME)

CM 1

CRN 38215-38-2
 CMF C16 H10



CM 2

CRN 536-74-3
 CMF C8 H6

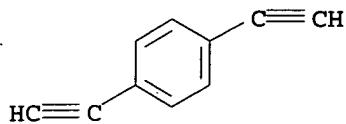
Ph-C≡CH

RN 365568-89-4 HCAPLUS

CN Benzene, 1,4-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX NAME)

CM 1

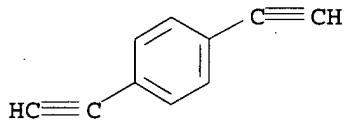
CRN 935-14-8
 CMF C10 H6



CM 2

CRN 629-05-0
CMF C8 H14 $\text{Me}-(\text{CH}_2)_5-\text{C}\equiv\text{CH}$ RN 365568-90-7 HCPLUS
CN Benzene, 1,4-diethynyl-, polymer with 1-dodecyne (9CI) (CA INDEX NAME)

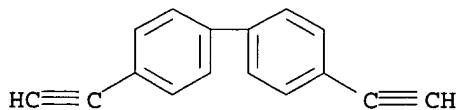
CM 1

CRN 935-14-8
CMF C10 H6

CM 2

CRN 765-03-7
CMF C12 H22 $\text{Me}-(\text{CH}_2)_9-\text{C}\equiv\text{CH}$ RN 365568-91-8 HCPLUS
CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-octyne (9CI) (CA INDEX NAME)

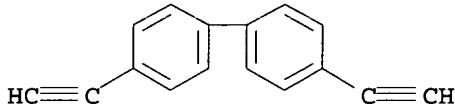
CM 1

CRN 38215-38-2
CMF C16 H10

CM 2

CRN 629-05-0
CMF C8 H14Me—(CH₂)₅—C≡CHRN 365568-92-9 HCPLUS
CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with 1-dodecyne (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2
CMF C16 H10

CM 2

CRN 765-03-7
CMF C12 H22Me—(CH₂)₉—C≡CH

CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 35, 73
 IT 28408-99-3P 76307-47-6P 365568-89-4P
 365568-90-7P 365568-91-8P 365568-92-9P
 365568-93-0P 365568-94-1P 365568-95-2P
 (light emitting and optical limiting properties of
 hyperbranched polyphenylenes)
 REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L51 ANSWER 14 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2001:221050 HCPLUS
 DOCUMENT NUMBER: 135:20054
 TITLE: Synthesis and photoluminescence of
 hyperbranched polyphenylenes
 AUTHOR(S): Peng, Han; Xu, Kaitian; Luo, Jingdong; Tang,
 Ben Zhong
 CORPORATE SOURCE: Department of Chemistry, Hong Kong University
 of Science & Technology, Hong Kong, Peop. Rep.
 China
 SOURCE: Polymer Preprints (American Chemical Society,
 Division of Polymer Chemistry) (2001), 42(1),
 560-561
 CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer Chemistry

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: English

AB Hyperbranched polyphenylenes with unique structure were synthesized by cyclotrimerization polymerization of diacetylenes with monoacetylenes. Copolymers of 4,4'-diethynylbiphenyl and 1,4-diethynylbenzene with phenylacetylene and 1-naphthylacetylene were carried out using $TaCl_5\text{-}Ph_4Sn$ as catalyst in toluene. The structure and mol. weight of the copolymers can be tailored by changing the feed ratio of diacetylene to monoacetylene. The structure and properties of the polyphenylenes were studied by IR, UV, NMR, TGA and fluorescence spectroscopy methods. The polyphenylenes have good solubility in common organic solvents and excellent thermal stability up to 500° and emit strong deep-blue light at about 400 nm when excited at 350 nm. The observed fluorescence intensity is much higher than that of poly(1-phenyl-1-octyne), a well-known highly fluorescent polymer. The hyperbranched polyphenylenes with unique structure are excellent luminescent materials with high thermal stability.

IT 28408-99-3P 76307-47-6P, 4,4'-Diethynylbiphenyl-phenylacetylene copolymer 99944-43-1P
343217-11-8P

(preparation via cyclotrimerization and photoluminescence of thermally stable hyperbranched polyphenylene polyacetylenes)

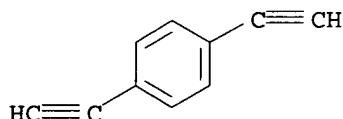
RN 28408-99-3 HCPLUS

CN Benzene, 1,4-diethynyl-, polymer with ethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 935-14-8

CMF C10 H6



CM 2

CRN 536-74-3

CMF C8 H6

Ph-C≡CH

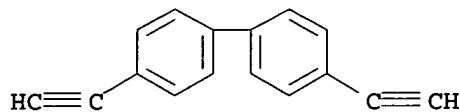
RN 76307-47-6 HCPLUS

CN 1,1'-Biphenyl, 4,4'-diethynyl-, polymer with ethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

CMF C16 H10



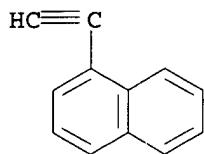
CM 2

CRN 536-74-3
CMF C8 H6

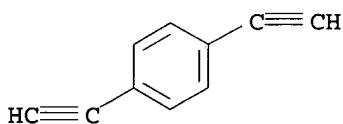
Ph-C≡CH

RN 99944-43-1 HCPLUS
CN Benzene, 1,4-diethynyl-, polymer with 1-ethynylnaphthalene (9CI)
(CA INDEX NAME)

CM 1

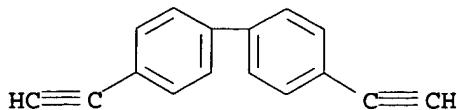
CRN 15727-65-8
CMF C12 H8

CM 2

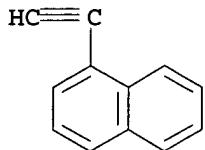
CRN 935-14-8
CMF C10 H6RN 343217-11-8 HCPLUS
CN Naphthalene, 1-ethynyl-, polymer with 4,4'-diethynyl-1,1'-biphenyl
(9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2
CMF C16 H10



CM 2

CRN 15727-65-8
CMF C12 H8

CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 73
 IT 28408-99-3P 76307-47-6P, 4,4'-Diethynylbiphenyl-
 phenylacetylene copolymer 99944-43-1P
 343217-11-8P
 (preparation via cyclotrimerization and photoluminescence of
 thermally stable hyperbranched polyphenylene polyacetylenes)
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L51 ANSWER 15 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2001:206603 HCPLUS
 DOCUMENT NUMBER: 134:367506
 TITLE: Design and photofunctions of
 dendrimer-encapsulated
 poly(phenyleneethynylene)s
 AUTHOR(S): Jiang, Dong-Lin; Sato, Takafumi; Aida, Takuzo
 CORPORATE SOURCE: Department of Chemistry and Biotechnology,
 Graduate School of Engineering, The University
 of Tokyo, Tokyo, 113-8656, Japan
 SOURCE: Chinese Journal of Polymer Science (2001),
 19(2), 161-166
 CODEN: CJPSEG; ISSN: 0256-7679
 PUBLISHER: Springer-Verlag
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A series of increasing generation dendrimer side-groups on
 phenylacetylene copolymers were synthesized. The light-harvesting
 antenna functions of dendrimer frame works together with the
 blue-light emitting activities of the
 phenylacetylene copolymers were highlighted. The phenylacetylene
 copolymer with largest dendrimer side-group gave a high emission
 quantum yield of 0.97, indicating that the dendrimers protect the
 conjugated backbone from collisional energy dissipation.
 IT 135756-78-4DP, reaction products with 2,5-
 diethynylhydroquinone, polymers with p-diiodobenzene
 (dendritic; light-harvesting antenna dendritic-side-groups on

phenylacetylene copolymer that emits **blue light**

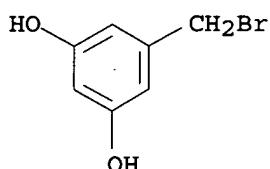
RN 135756-78-4 HCAPLUS

CN 1,3-Benzene diol, 5-(bromomethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 33617-40-2

CMF C7 H7 Br O2



CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 35, 73

ST light harvesting antenna dendritic side group phenylacetylene copolymer; **blue light** emitting phenylacetylene copolymer dendritic side group

IT **Light**

(**blue**; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Polyethers, properties

(dendrimers; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Conducting polymers

Electronic excitation

Fluorescence

(light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Polyacetylenes, properties

(light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Photosystems

(light-harvesting antenna; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT Dendritic polymers

(polyethers; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT 135756-78-4DP, reaction products with 2,5-

diethynylhydroquinone, polymers with p-diiodobenzene

(dendritic; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT 536-74-3DP, Ethynylbenzene, reaction products with phenylacetylene

copolymer with dendritic-side-groups 252273-92-0DP,

ethynylbenzene terminated 252273-94-2DP, ethynylbenzene

terminated 340232-49-7P 340232-50-0P

(light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT 75610-48-9 152811-37-5 176650-93-4 252273-95-3
(light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

IT 252273-91-9P 252273-93-1P
(monomer; light-harvesting antenna dendritic-side-groups on phenylacetylene copolymer that emits **blue light**)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 16 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:655692 HCAPLUS

DOCUMENT NUMBER: 133:335596

TITLE: Strongly fluorescent ethylene-bridged poly(para-phenylene) ladder polymers

AUTHOR(S): Forster, Michael; Scherf, Ullrich

CORPORATE SOURCE: Max-Planck-Institut fur Polymerforschung, Mainz, D-55128, Germany

SOURCE: Macromolecular Rapid Communications (2000), 21(12), 810-813

CODEN: MRCOE3; ISSN: 1022-1336

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

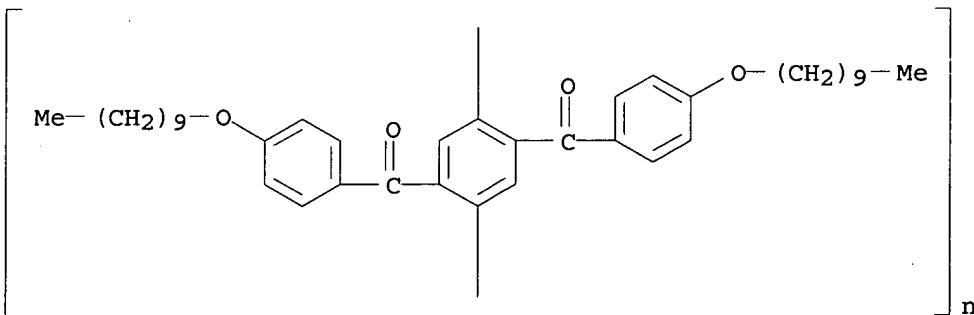
LANGUAGE: English

AB Fully soluble ethylene-bridged p-phenylene ladder poly(dihydrophenanthrene)s (LPDPs) were prepared via aryl-aryl homo-coupling according to the method of Yamamoto described by K. Chmil and U. Scherf (1993), followed by polymer-analogous pinacolization with SmI₂. The strongly fluorescent polymers obtained were characterized by NMR, UV/Vis-, and photoluminescence (PL) measurements.

IT 192316-37-3DP, reductively cyclized (poly(dihydrophenanthrene); preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence)

RN 192316-37-3 HCAPLUS

CN Poly[2,5-bis[4-(decyloxy)benzoyl]-1,4-phenylene] (9CI) (CA INDEX NAME)

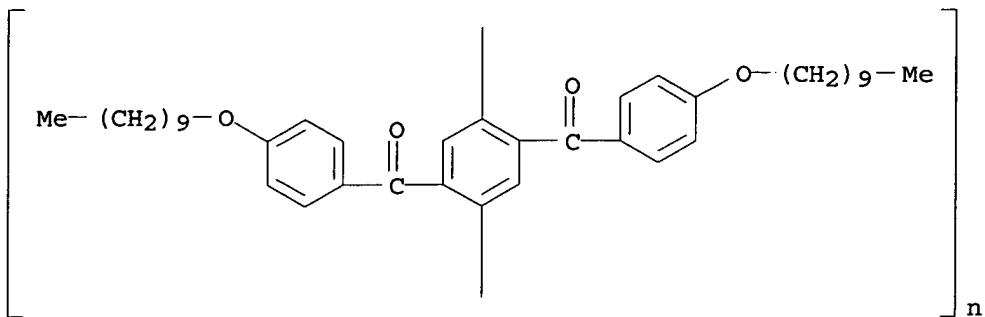


IT 192316-37-3P

(preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence)

RN 192316-37-3 HCPLUS

CN Poly[2,5-bis[4-(decyloxy)benzoyl]-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

ST polyphenylene ladder prepⁿ coupling pinacolization sequence; samarium iodide pinacolization polydihydrophenanthrene ladder polymer prepⁿ; fluorescent polyphenylene ethylene bridged ladder polymer

IT Coupling reaction

Luminescence

(preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence)

IT Ladder polymers

Polyphenyls

(preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence)

IT Cyclization

(reductive; preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence)

IT Polymer chains

(rigid; preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence)

IT 32248-43-4, Samarium iodide (SmI₂)

(cyclization reagent; preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence
)

IT 147833-55-4DP, reductively cyclized 192316-37-3DP,

reductively cyclized

(poly(dihydrophenanthrene); preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence
)

IT 1295-35-8, Bis(1,5-cyclooctadiene)nickel

(polymerization catalyst; preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence
)

)
IT 147833-55-4DP, reductively cyclized 192316-37-3P
 (preparation of strongly fluorescent decylbenzoyl-p-phenylene ladder polymers via coupling and cyclization and effect of rigidity on luminescence)
 REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 17 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:558357 HCAPLUS
 DOCUMENT NUMBER: 131:329154
 TITLE: Synthesis and optical properties of a series of pyrrolopyridazine derivatives: deep blue organic luminophors for electroluminescent devices
 AUTHOR(S): Cheng, Yang; Ma, Bin; Wudl, Fred
 CORPORATE SOURCE: Exotic Materials Institute and Department of Chemistry and Biochemistry, University of California, Los Angeles, CA, 90095, USA
 SOURCE: Journal of Materials Chemistry (1999), 9(9), 2183-2188
 CODEN: JMACEP; ISSN: 0959-9428
 PUBLISHER: Royal Society of Chemistry
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The authors describe a systematic study of eight blue light-emitting mols. which can be prepared in one step from inexpensive com. starting materials. The relative luminescence quantum yield can be ≤84% and the heterocycles are luminescent in the condensed state, either as solids or as oils, indicating that there is no self-quenching in this system. The last observation augurs well for these heterocycles being useful in the fabrication of deep blue light-emitting devices.

IT 16969-45-2P
 (synthesis and optical properties of a series of pyrrolopyridazine derivs. and their protonated forms)
 RN 16969-45-2 HCAPLUS
 CN Pyridine, conjugate acid (8CI, 9CI) (CA INDEX NAME)

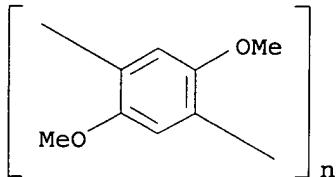


● H⁺

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 22, 28
 IT 7593-61-5DP, protonated 7605-03-0DP, protonated
 16969-45-2P
 (synthesis and optical properties of a series of pyrrolopyridazine derivs. and their protonated forms)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 18 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:437450 HCPLUS
 DOCUMENT NUMBER: 131:177038
 TITLE: A comparative study on the properties of poly(2,5-dimethoxy-1,4-phenylene vinylene) by the CPR and Wessling methods
 AUTHOR(S): Wang, Y. M.; Gan, Y. Y.; Kang, E. T.; Gan, L. H.
 CORPORATE SOURCE: School of Science, Nanyang Technological University, Singapore, 259756, Singapore
 SOURCE: Journal of Applied Polymer Science (1999), 73(11), 2177-2181
 CODEN: JAPNAB; ISSN: 0021-8995
 PUBLISHER: John Wiley & Sons, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Poly(2,5-dimethoxy-1,4-phenylene) (PDMoPV) prepared via the Cl precursor route (CPR) exhibits absorption at a shorter wavelength than that obtained by the Wessling method. The polymer fluoresces at a maximum of 505 nm as compared to 540 nm by Wessling method. Both the fabricated ITO-PDMoPV (via CPR)-Al and ITO/PDMoPV (via Wessling method)-Al devices emit green-blue light and the turn-on voltages are relatively low at 7 and 4 V, resp. Significantly, the device fabricated using PDMoPV via CPR has a higher output than that via the Wessling method.
 IT 62271-79-8P, Poly(2,5-dimethoxy-1,4-phenylene)
 (comparative study on properties of poly(dimethoxyphenylene vinylene) by chlorine precursor routh and Wessling methods with LED, and fluorescence optical and elec. properties)
 RN 62271-79-8 HCPLUS
 CN Poly(2,5-dimethoxy-1,4-phenylene) (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 35, 36, 76
 IT 62271-79-8P, Poly(2,5-dimethoxy-1,4-phenylene)
 (comparative study on properties of poly(dimethoxyphenylene vinylene) by chlorine precursor routh and Wessling methods with LED, and fluorescence optical and elec. properties)
 REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 19 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1998:779182 HCPLUS

DOCUMENT NUMBER: 130:110705
 TITLE: Electroactive materials containing macrocyclic
 pseudo-crown ether cavities electroformed from
 a solid-state electropolymerization reaction
 AUTHOR(S): Fabre, Bruno; Marrec, Philippe; Simonet,
 Jacques
 CORPORATE SOURCE: Laboratoire d'Electrochimie Moleculaire et
 Macromoleculaire, Unite Mixte de Recherche du
 CNRS No. 6510, Universite de Rennes I, Rennes,
 35042, Fr.
 SOURCE: Journal of the Electrochemical Society (1998),
 145(12), 4110-4119
 CODEN: JESOAN; ISSN: 0013-4651
 PUBLISHER: Electrochemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Monomers comprising aromatic groups (pyrrole/thiophene, pyrrole/dimethoxybenzene, and dimethoxybenzene/thiophene) linked by an ether chain were prepared, and subjected to two-step electropolymer. In the first step, at relatively low anodic potential, oxidation of the pyrrole moiety in the monomer led to electroactive homopolymer films containing pendant aromatic moieties. Subsequent oxidation of the homopolymers by applying more pos. potentials promoted anodic coupling of the pendant moiety, the thiophene, within the structure. The efficiency of this solid-state electropolymer. reaction was strongly dependent on film thickness. The resulting electroactive polymers have controllable size pseudo-crown ether cavities in a ladder-like structure. The polymers are electrochem. stable and have redox reversibility, and the reticulation step did not affect the conjugation of the polymer obtained in the first step. SEM images indicate a tortuous and irregular surface of the polymers, more so in the second-stage structure which also showed convolutions under high magnification. The polymers have potential for complexation with cations through the ether cavities.

IT 30604-81-0P, Polypyrrole
 (polythiophene, ladder; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

RN 30604-81-0 HCPLUS

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

CMF C4 H5 N



CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 72
 ST pyrrolyletherthiophene monomer electrochem polynmn two stage; crown ether like cavity pyrrolyletherthiophene electroactive polymer; anodic coupling thiophene polypyrrole ether linkage conducting polymer; conjugated polypyrrole polythiophene ether ladder

IT polymer

IT Polymers, preparation
(conjugated, polypyrrole polythiophenes, ladder; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT Coupling reaction
(electrochem., anodic; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT Polymerization
(electrochem., oxidative and anodic coupling; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT Redox reaction
(electrochem.; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT Conducting polymers
(polypyrrole polythiophene ladder; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT Ladder polymers
(polypyrrole polythiophenes; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT Polymers, preparation
(polypyrrole-polythiophene, ladder; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT Polymers, preparation
(polythiophenes, polymethoxyphenyl side chain; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT Optical absorption
(preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT Polymer chains
(side, pseudo crown ether; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT 219690-53-6P 219690-54-7P
(ladder, pseudo-crown cavity; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT 75-05-8, Acetonitrile, uses 429-42-5, Tetrabutylammonium tetrafluoroborate
(polymerization electrolyte; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT 30604-81-0P, Polypyrrole
(polythiophene, ladder; preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

IT 219690-55-8P
(preparation and electroactivity of poly(pyrrole-thiophene)s with pseudo-crown ether cavity and ladder structure by electropolymer.)

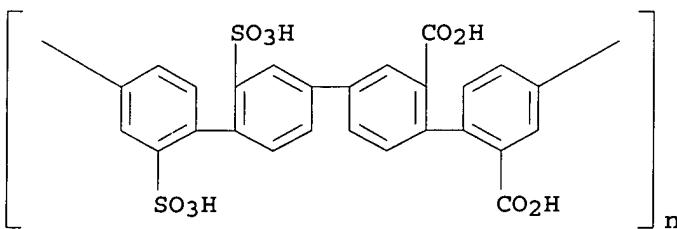
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 20 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1998:336241 HCPLUS
 DOCUMENT NUMBER: 129:46944
 TITLE: Self-assembled multilayers and photoluminescence properties of a new water-soluble poly(para-phenylene)
 AUTHOR(S): Shi, Xiaobo; Li, DeQuan; Lutt, M.; Fitzsimmons, M. R.; Van Patten, G. P.
 CORPORATE SOURCE: Chemical Science and Technology Division(CST4) and Manuel Lujan Jr. Neutron Scattering Center, Los Alamos National Laboratory, Los Alamos, NM, 87545, USA
 SOURCE: Materials Research Society Symposium Proceedings (1998), 488(Electrical, Optical, and Magnetic Properties of Organic Solid-State Materials IV), 133-140
 CODEN: MRSPDH; ISSN: 0272-9172
 PUBLISHER: Materials Research Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB This paper reports the synthesis and characterizations of a new water-soluble poly(para-phenylene) (PPP) and its applications in preparing self-assembled multi-layer films. This new water-soluble conducting polymer was prepared through the sulfonation reaction of poly(p-quaterphenylene-2,2'-dicarboxylic acid). The incorporation of sulfonate groups has dramatically improved PPP's solubility in H₂O at a wide pH range, whereas previous PPP is only slightly soluble in basic solns. Dilute aqueous solns. of this polymer with acidic, neutral or basic pH emit brilliant blue light while irradiated with UV light. The sulfonated PPP emits from 350 nm to 455 nm with a maximum intensity at 380 nm. Self-assembled multilayers of this sulfonated PPP were constructed with a pos. charged polymer poly(diallyl di-Me ammonium chloride) and characterized with various surface analyses. Conductive (RuO₂ and ITO), semiconductive (Si wafer), and nonconductive (SiO₂) substrates were used in the preparation of self-assembled multilayers. Elec., optical and structural properties of these novel self-assembled thin films are discussed.

IT 208389-57-5P
 (self-assembled multilayers and photoluminescence properties of a new water-soluble poly(para-phenylene))
 RN 208389-57-5 HCPLUS
 CN Poly[(2,2'-dicarboxy-3'',2''''-disulfo[1,1':4',1'':4'',1'''-quaterphenyl]-4,4''''-diyl)] (9CI) (CA INDEX NAME)

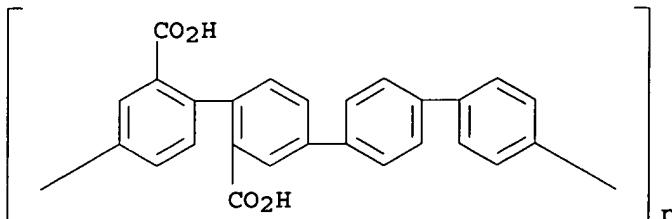


IT 135615-40-6

(self-assembled multilayers and photoluminescence properties of
a new water-soluble poly(para-phenylene) prepared by sulfonation of)

RN 135615-40-6 HCAPLUS

CN Poly(2,2'-dicarboxy[1,1':4',1'':4'',1''':4''-quaterphenyl]-4,4''-
diyl) (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other
Related Properties)

Section cross-reference(s): 36, 38

IT 208389-57-5P

(self-assembled multilayers and photoluminescence properties of
a new water-soluble poly(para-phenylene))

IT 135615-40-6

(self-assembled multilayers and photoluminescence properties of
a new water-soluble poly(para-phenylene) prepared by sulfonation of)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 21 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:89779 HCAPLUS

DOCUMENT NUMBER: 128:115314

TITLE: Water Soluble Photo- and Electroluminescent
Alkoxy-Sulfonated Poly(p-phenylenes)

Synthesized via Palladium Catalysis

AUTHOR(S): Kim, Seungho; Jackiw, Jennifer; Robinson,
Edward; Schanze, Kirk S.; Reynolds, John R.;
Baur, Jeff; Rubner, Michael F.; Boils,
Danielle

CORPORATE SOURCE: Department of Chemistry Center for
Macromolecular Science and Engineering,
University of Florida, Gainesville, FL, 32611,
USA

SOURCE: Macromolecules (1998), 31(4), 964-974
CODEN: MAMOBX; ISSN: 0024-9297

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

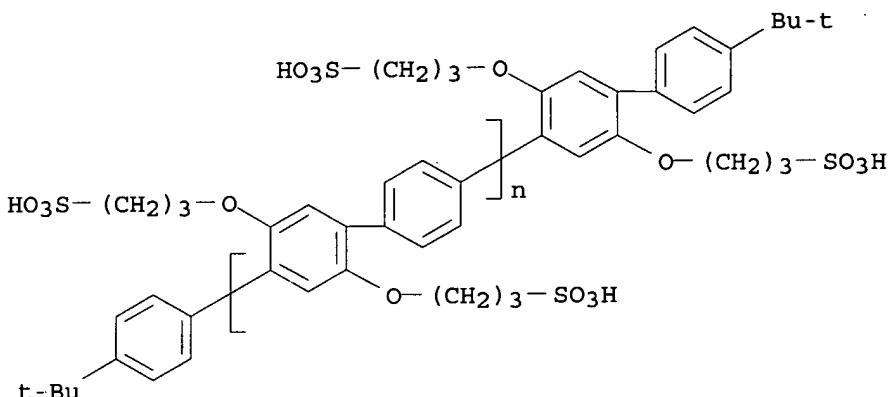
AB Water-soluble poly(p-phenylene) derivs., poly[2,5-bis(3-sulfonatopropoxy)-1,4-phenylene-alt-1,4-phenylene] sodium salt (PPP-OPSO₃) and poly[2,5-bis(3-sulfonatopropoxy)-1,4-phenylene-alt-4,4'-biphenylene] sodium salt (PPBP-OPSO₃), were synthesized through a Suzuki coupling reaction of 1,4-dibromo-2,5-bis(3-sulfonatopropoxy)benzene sodium salt with 1,4-phenylenediboronic acid or 4,4'-biphenyldiboronic acid 2,2'-dimethylpropyl diester using a water-soluble Pd(0) catalyst or Pd(OAc)₂. The pH dependence of the coupling reaction was investigated and resulted in pH independence at pH levels greater than 10.0. End group anal. of PPP-OPSO₃ via ¹H NMR of tert-Bu end-capped polymers

indicates d.p. in excess of 40 (ca. 80 rings per chain). Viscometric anal. of PPP-OPSO₃ in water shows a behavior comparable to sodium poly(styrenesulfonate) (PSS) of mol. weight 8000. In addition, the polyelectrolyte effect is observed at low polymer concns. The λ_{max} of the $\pi \angle \pi^*$ absorption for PPP-OPSO₃ is found at 339-342 nm, while that of PPBP-OPSO₃ shows a bathochromic shift to 349-352 nm. All of the water-soluble PPP oligomers and polymers feature strong blue fluorescence. The fluorescence has been characterized by quantum yield and lifetime studies. Nanosecond-microsecond laser flash photolysis expts. indicate that direct excitation of the polymers in the near-UV leads to triplet state formation, albeit with comparatively low efficiency. Multilayered films of PPP-OPSO₃ were fabricated with poly(ethyleneimine) (PEI) using layer-by-layer self-assembly and incorporated into blue-light-emitting devices.

IT 201605-68-7P

(preparation and characterization of)

RN 201605-68-7 HCAPLUS

CN Poly[2,5-bis(3-sulfopropoxy)[1,1'-biphenyl]-4,4'-diyl],
 α -[4-(1,1-dimethylethyl)phenyl]- ω -[4'-(1,1-dimethylethyl)-2,5-bis(3-sulfopropoxy)[1,1'-biphenyl]-4-yl]-, sodium salt (9CI) (CA INDEX NAME)

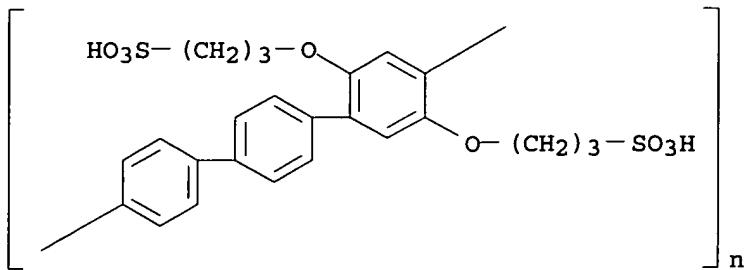
●x Na

IT 174721-53-0P

(preparation of water-soluble photo- and electroluminescent)

RN 174721-53-0 HCAPLUS

CN Poly[2,5-bis(3-sulfopropoxy)[1,1':4',1'''-terphenyl]-4,4'''-diyl disodium salt] (9CI) (CA INDEX NAME)



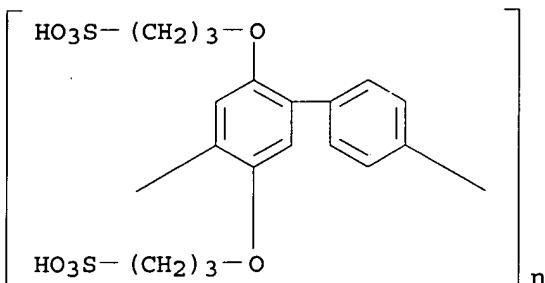
●2 Na

IT 153986-30-2P

(preparation of water-soluble photo- and electroluminescent)

RN 153986-30-2 HCAPLUS

CN Poly[2,5-bis(3-sulfopropoxy)-1,1'-biphenyl]-4,4'-diyl disodium salt] (9CI) (CA INDEX NAME)



●2 Na

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 73

IT 123324-71-0DP, (4-tert-Butylphenyl)boronic acid, reaction products with alkoxy-sulfonated polyphenylenes 174697-31-5DP, reaction products with (tert-butylphenyl)boronic acid 201605-68-7P
(preparation and characterization of)

IT 174721-53-0P 201605-64-3P

(preparation of water-soluble photo- and electroluminescent)

IT 153986-30-2P 174697-31-5P, 1,4-Dibromo-2,5-bis(3-sulfonatopropoxy)benzene disodium salt-1,4-phenylenediboronic acid copolymer
(preparation of water-soluble photo- and electroluminescent)

REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 22 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

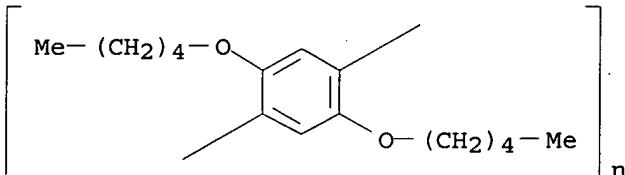
ACCESSION NUMBER: 1997:611611 HCAPLUS

DOCUMENT NUMBER: 127:307757

TITLE: Novel chiral poly(p-phenylene) derivatives containing cyclophane-type moieties
 AUTHOR(S): Fiesel, Rainer; Huber, Joachim; Apel, Ute;
 Enkelmann, Volker; Hentschke, Reinhard;
 Scherf, Ullrich; Cabrera, Karin
 CORPORATE SOURCE: Max-Planck-Institut Polymerforschung, Mainz,
 D-55128, Germany
 SOURCE: Macromolecular Chemistry and Physics (1997),
 198(9), 2623-2650
 CODEN: MCHPES; ISSN: 1022-1352
 PUBLISHER: Huethig & Wepf
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The introduction of cyclic ansa-substituents allows for the synthesis of soluble poly(p-phenylene)s (PPP's) possessing main chain chirality. The novel chiral PPP's represent an attractive combination of z-conjugated character and chirality. The authors have synthesized open chain (single-stranded) as well as ladder-type chiral PPP's. The single-stranded chiral PPP's exhibit temperature-dependent changes of chiroptical properties. The behavior should be assigned to conformational changes. The chiral ladder polymers contain the cyclophane loops exclusively on one side of the mol. board and are characterized by an unexpectedly high chiroptical activity of the $\pi-\pi^*$ -transition. They are potential candidates to study non-linear chiroptical properties and to investigate circular polarized luminescence (photo- and electroluminescence) effects.

IT 196870-84-5P, Poly[2,5-bis(pentyloxy)-1,4-phenylene]
 (preparation and properties of chiral poly(p-phenylene)s containing cyclophane-type moieties)
RN 196870-84-5 HCPLUS
CN Poly[2,5-bis(pentyloxy)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)
IT Ladder polymers
 (preparation and properties of chiral poly(p-phenylene) derivs.
 containing cyclophane-type moieties)
IT 196870-83-4P 196870-84-5P, Poly[2,5-bis(pentyloxy)-1,4-phenylene] 196870-85-6P 196870-86-7P 196965-78-3P
 197251-96-0P 197251-97-1P 197316-07-7P 197316-08-8P
 (preparation and properties of chiral poly(p-phenylene)s containing cyclophane-type moieties)

L51 ANSWER 23 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:382204 HCPLUS
 DOCUMENT NUMBER: 127:82378
 TITLE: Light-emitting diode based on oligo-phenylene vinylene and butyl-PBD blends
 AUTHOR(S): Lee, Jae-Gyoung; Park, Byoungchoo; Woo,

Hyung-Suk; Kim, Youngkyoo; Ha, Chang-Sik; Lee, Choong-Man; Jeong, Kwangho; Ha, Jeong-Hyon; Kim, Yong-Rok

CORPORATE SOURCE: Electronic Materials Lab., Institute for Advanced Engineering, Kyonggi-Do, S. Korea
 SOURCE: Solid State Communications (1997), 102(12), 895-898
 CODEN: SSCOAA; ISSN: 0038-1098
 PUBLISHER: Elsevier
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The authors have fabricated light-emitting diodes (LEDs) using organic materials; a polymer blend dispersing oligophenylenevinylene (oligo-PV), 1,4-distyrylbenzene and 2-(4-biphenyl)-5-4(-tert-butylphenyl)-1,3,4-oxadiazole (butyl-PBD) as emissive materials into a soluble polyimide mixed with polyaniline (PANI) of emeraldine salt used as a hole transport material. These polymer dispersed materials were sandwiched between In and indium-tin-oxide (ITO) electrodes. In order to increase the electron injection into the emissive materials, we have inserted a thin Mg layer between In and polymer blends. The electroluminescence (EL) spectra of LEDs showed noticeable enhancement of the oscillator strength of oligo-PV peak at 2.76 eV. This implies improved quantum efficiency of this blue light-emitting diode, resulting from the excitonic migration from butyl-PBD to oligo-PV. We have found that the EL device with host polymers, polyimide and PANI, displayed increasing device performance, lowering the turning point in I-V characteristics, compared to that of LED without PANI. Under normal illumination conditions, our devices with PANI showed visible blue-violet color at room temperature after applying a bias exceeding 8 V.

IT 25233-30-1P, Polyaniline
 (emeraldine salt form; fabrication and performance of light-emitting diodes based on oligophenylenevinylene-polymer blends)

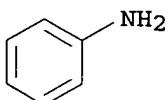
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 73, 76

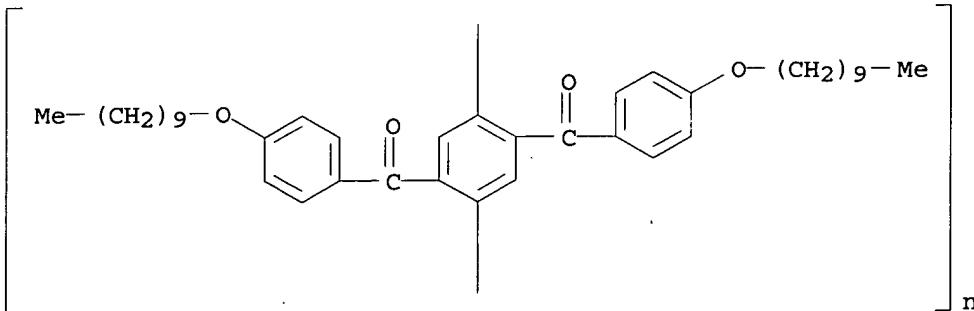
IT 25233-30-1P, Polyaniline
 (emeraldine salt form; fabrication and performance of light-emitting diodes based on oligophenylenevinylene-polymer blends)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

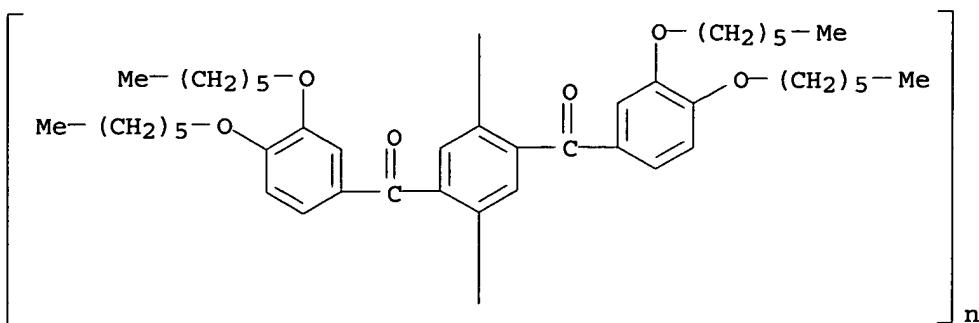
L51 ANSWER 24 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:341555 HCAPLUS
 DOCUMENT NUMBER: 127:109279
 TITLE: Conjugated all-carbon ladder polymers. Improved solubility and molecular weights
 AUTHOR(S): Chmil, K.; Scherf, U.
 CORPORATE SOURCE: Max-Planck-Institut Polymerforschung, Mainz,
 D-55128, Germany
 SOURCE: Acta Polymerica (1997), 48(5-6), 208-211
 CODEN: ACPODY; ISSN: 0323-7648
 PUBLISHER: VCH
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB A synthesis of the title polymers is achieved with a more highly substituted monomer than previously used: 2,5-dibromo-1,4-bis(3,4-dihexyloxybenzoyl)benzene, allowing the synthesis of enlarged polymer chains with $M_n \approx 12000$ and $M_w \approx 22000$, corresponding to a condensation of about 18 phenylene units. The first step, formation of the polymeric, open-chain precursor, is an AA-type coupling using $Ni(COCl)_2$ for the dehalogenation with co-reagents 2,2'-bipyridine and 1,5-cyclooctadiene with dimethylacetamide or DMF as solvent. The cyclization is carried out using B_2S_3 generated in situ from BCl_3 and tricyclohexyltin sulfide, leading to formation of thioketones which dimerize to form cyclic disulfide bridges followed by elimination of S_2 to give the conjugated aromatic ladder polymer, whose structure and mol. weight is confirmed by NMR, UV/vis spectra, photoluminescence spectra, and GPC.

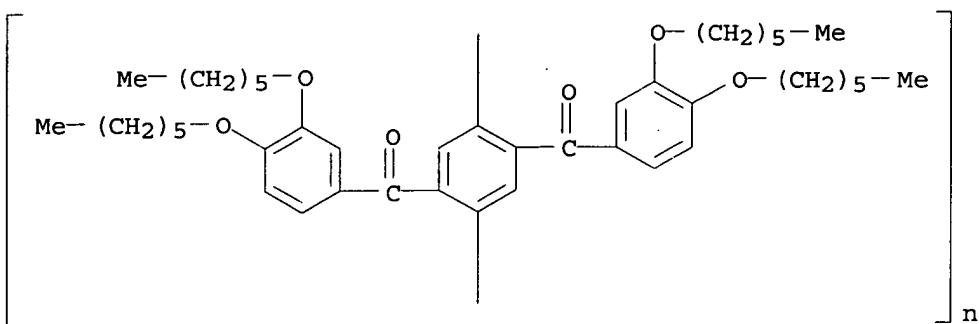
IT 192316-37-3D, reductive cyclized
 (preparation and properties of conjugated all-carbon ladder polymers with improved solubility)
 RN 192316-37-3 HCAPLUS
 CN Poly[2,5-bis[4-(decyloxy)benzoyl]-1,4-phenylene] (9CI) (CA INDEX NAME)



IT 192316-36-2P, 2,5-Dibromo-1,4-bis(3,4-dihexyloxybenzoyl)benzene homopolymer, str
 (preparation and properties of conjugated all-carbon ladder polymers with improved solubility)
 RN 192316-36-2 HCAPLUS
 CN Poly[2,5-bis[3,4-bis(hexyloxy)benzoyl]-1,4-phenylene] (9CI) (CA INDEX NAME)



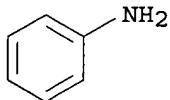
IT 192316-36-2DP, reductive cyclized
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 RN 192316-36-2 HCAPLUS
 CN Poly[2,5-bis[3,4-bis(hexyloxy)benzoyl]-1,4-phenylene] (9CI) (CA
 INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 73
 ST polymer carbon conjugated ladder polyacene synthesis
 IT Luminescence
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT Polyphenyls
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT Ladder polymers
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT 147833-55-4D, reductive cyclized 192316-37-3D, reductive
 cyclized
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT 192316-35-1P, 2,5-Dibromo-1,4-bis(3,4-dihexyloxybenzoyl)benzene
 homopolymer 192316-36-2P, 2,5-Dibromo-1,4-bis(3,4-
 dihexyloxybenzoyl)benzene homopolymer, sru
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)
 IT 192316-35-1DP, reductive cyclized 192316-36-2DP,
 reductive cyclized
 (preparation and properties of conjugated all-carbon ladder
 polymers with improved solubility)

L51 ANSWER 25 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1995:806225 HCPLUS
 DOCUMENT NUMBER: 124:30525
 TITLE: Bright blue electroluminescence from an oxadiazole-containing copolymer
 AUTHOR(S): Pei, Qibing; Yang, Yang
 CORPORATE SOURCE: UNIAX Corp., Santa Barbara, CA, 93117, USA
 SOURCE: Advanced Materials (Weinheim, Germany) (1995), 7 (6), 559-61
 CODEN: ADVMEW; ISSN: 0935-9648
 PUBLISHER: VCH
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Blue electroluminescence of a synthesized polyoxadiazole-polyether (OP) film is reported. LED devices were prepared by combination of this OP film with other polymeric layers (e.g. conducting polyaniline) between In-Sn-oxide and a Ca electrode. The external quantum efficiency was increased to 0.1% and the intensity of the blue emitted light to 40 cd/m².
 IT 25233-30-1, Polyaniline
 (dodecylbenzenesulfonic acid-doped; quantum efficiency of LEDs with oxadiazole-containing polymeric layers)
 RN 25233-30-1 HCPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
CMF C6 H7 N

CC 35-5 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 73
 IT 25233-30-1, Polyaniline
 (dodecylbenzenesulfonic acid-doped; quantum efficiency of LEDs with oxadiazole-containing polymeric layers)

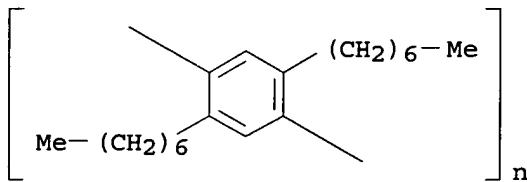
L51 ANSWER 26 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1995:576198 HCPLUS
 DOCUMENT NUMBER: 122:292686
 TITLE: Blue electroluminescence from poly(2,5-diheptyloxy-1,4-phenylene)
 AUTHOR(S): Hamaguchi, Maki; Yoshino, Katsumi
 CORPORATE SOURCE: Dept. Elec. Eng., Osaka Univ., Osaka, 565, Japan
 SOURCE: Japanese Journal of Applied Physics, Part 2: Letters (1995), 34(5A), L587-L589
 CODEN: JAPLD8; ISSN: 0021-4922
 PUBLISHER: Japanese Journal of Applied Physics
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Poly(2,5-diheptyloxy-1,4-phenylene) has been prepared by oxidative coupling of p-diheptyloxybenzene using iron(III) chloride as

catalyst in chloroform at room temperature. The polymer obtained was completely soluble in chloroform. An electroluminescence diode based on this polymer emitting blue light was fabricated, and its properties are discussed in terms of the band structure of the diode.

IT 130870-49-4P, Poly(2,5-diheptyl-1,4-phenylene)
 (fabrication and characteristics of blue electroluminescent
 diodes from poly(diheptyloxyphenylene) prepared via oxidative
 polymerization)

RN 130870-49-4 HCAPLUS

CN Poly(2,5-diheptyl-1,4-phenylene) (9CI) (CA INDEX NAME)



CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s) : 35, 37, 73

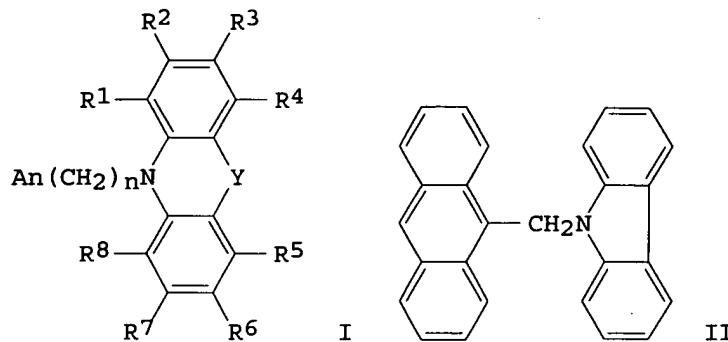
IT 130870-49-4P, Poly(2,5-diheptyl-1,4-phenylene)
 (fabrication and characteristics of blue electroluminescent
 diodes from poly(diheptyloxyphenylene) prepared via oxidative
 polymerization)

L51 ANSWER 27 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:680541 HCAPLUS
 DOCUMENT NUMBER: 121:280541
 TITLE: Preparation of (anthracenyl)alkylheterocycles
 as electroluminescent compounds
 INVENTOR(S): Uchino, Masazumi; Uchida, Manabu; Izumisawa,
 Jusho; Yoshizawa, Satoru; Furukawa, Kenji
 PATENT ASSIGNEE(S): Chisso Corp, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06206865	A2	19940726	JP 1993-277529	1993 1008
PRIORITY APPLN. INFO.:			JP 1992-301761	A1 1992 1014

OTHER SOURCE(S) : MARPAT 121:280541
 GI

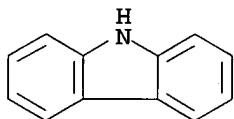


AB The title compds. I [An = anthracene; n = 1 or 2; Y = bond, S, etc.; R1 - R8 = H, halo, etc.] are prepared. Carbazole derivative II was prepared from 9-chloromethylanthracene and carbazole potassium salt. An electroluminescent element containing II showed a **blue** light under voltage 28 V.

IT 6033-87-0, Carbazole potassium salt
(preparation of (anthracenyl)alkylheterocycles as electroluminescent compds.)

RN 6033-87-0 HCAPLUS

CN 9H-Carbazole, potassium salt (9CI) (CA INDEX NAME)



● K

IC ICM C07D209-86
ICS C07D209-88; C07D219-02; C07D219-06; C07D241-46; C07D241-52;
C07D265-38; C07D279-22; C09K011-06

ICA G03G005-06

CC 27-11 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 28, 73

IT 92-84-2, Phenothiazine 135-67-1, Phenoxazine 6033-87-0
, Carbazole potassium salt 6624-23-3, 9-Anthraceneacetic acid
24463-19-2, 9-Chloromethylanthracene 122875-66-5
(preparation of (anthracenyl)alkylheterocycles as electroluminescent compds.)

L51 ANSWER 28 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1987:128426 HCAPLUS
 DOCUMENT NUMBER: 106:128426
 TITLE: Optical excitation in highly crystalline polyparaphhenylene
 AUTHOR(S): Leising, Gunther; Leitner, O.; Aldrian, F.;
 Kahlert, Hartmut W.
 CORPORATE SOURCE: Inst. Festkoerperphys., Tech. Univ. Graz,
 Graz, A-8010, Austria

SOURCE: Synthetic Metals (1987), 17(1-3), 635-8
 CODEN: SYMEDZ; ISSN: 0379-6779

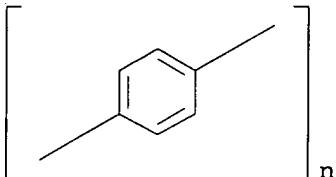
DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Highly crystalline poly(p-phenylene) was synthesized starting from a benzene/p-terphenyl mixture, which was polymerized in analogy to the Kovacic-procedure. The high crystallinity of the as prepared polymer and its increase by annealing is demonstrated by x-ray diffraction. On excitation with blue light (360 nm) a broad red luminescence peak appears around 700 nm. This emission and the corresponding high-energy absorption at apprx.360 nm are explained by electron-hole photoexcitation, lattice relaxation to a polaron-exciton defect and recombination luminescence emission.

IT 25190-62-9P, Poly(p-phenylene)
 (preparation and luminescence and crystallinity of)

RN 25190-62-9 HCPLUS

CN Poly(1,4-phenylene) (9CI) (CA INDEX NAME)



CC 73-6 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36

IT 25190-62-9P, Poly(p-phenylene)
 (preparation and luminescence and crystallinity of)

L51 ANSWER 29 OF 29 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1977:107087 HCPLUS

DOCUMENT NUMBER: 86:107087

TITLE: Ladder and partial ladder polyquinones

AUTHOR(S): Saltybaev, D. K.; Zhubanov, B. A.

CORPORATE SOURCE: USSR

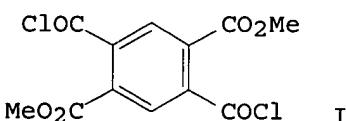
SOURCE: Vestnik Akademii Nauk Kazakhskoi SSR (1976),
 (11), 29-35

CODEN: VANKAM; ISSN: 0002-3213

DOCUMENT TYPE: Journal

LANGUAGE: Russian

GI



AB The mechanism of polyquinone formation via the acylation of arenes or heterocyclic compds. with pyromellitic dianhydride [89-32-7] or its derivative I [19014-14-3] in the presence of metal chlorides is

discussed and the polyquinone obtained by acylation with I in the presence of FeCl₃ [7705-08-0] is described. The use of FeCl₃ instead of the usual AlCl₃ catalyst led to higher viscosities for the polyketo ester prepolymers, but the prepolymers were also partially cyclized. High radiation resistance was observed for the ladder polyquinones. Data are given for the partial ladder I-carbazole prepolymers [58317-00-3].

IT 58317-00-3P
 (ladder and semi-ladder, properties and mechanism of preparation of)

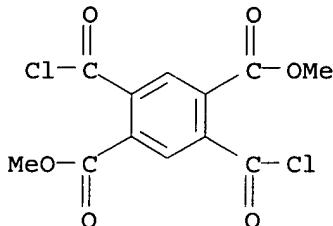
RN 58317-00-3 HCPLUS

CN 1,4-Benzenedicarboxylic acid, 2,5-bis(chlorocarbonyl)-, dimethyl ester, polymer with 9H-carbazole (9CI) (CA INDEX NAME)

CM 1

CRN 19014-14-3

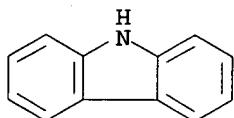
CMF C12 H8 Cl2 O6



CM 2

CRN 86-74-8

CMF C12 H9 N



CC 35-4 (Synthetic High Polymers)

ST polyquinone acylation prepn mechanism; arene acylation polymn pyromellitic anhydride; heterocycle acylation polymn pyromellitic anhydride; carbazole acylation polymn pyromellitic deriv; polyketo ester carbazole pyromellitic deriv; ladder polyquinone pyromellitic acylation; iron chloride polymn catalyst

IT Ladder polymers
 (polyquinones, preparation and properties of, from pyromellitic acylation polymerization of arenes or heterocyclic compds.)

IT 58317-00-3P
 (ladder and semi-ladder, properties and mechanism of preparation of)